

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Currently amended) ~~[[:]] A bottoming device for forming cross bottom paper bags, the device forming the cross bottoms of the paper bags by providing folds at the extremities of tubular segments from which the bags are produced such that glue layers are applied to the folded bottoms on the extremities of the tubular segments and/or the sheets intended to be glued with the bottoms with the help of gluers and connecting and gluing the folded bottoms and the sheets, the device comprising at least one gluer equipped with at least one glue reservoir or at least one glue duct in which glue is exposed to a pressure that is higher than the ambient pressure such that the at least one glue reservoir or the at least one glue duct is provided with at least one glue output orifice through which glue is directly applied on the sheets and/or folded bottoms~~ A bottoming device for forming a cross bottom paper bag, the device configured to form the cross bottom of the paper bag by providing folds at extremities of a tubular segment from which the bag is produced such that lines of a glue are applied to a folded bottom on the extremities of the tubular segment and/or to a sheet to be glued with the bottom, and to connect and glue the folded bottom and the sheet, the

device comprising a gluer having an application head with a glue duct in which the glue is exposed to a pressure that is higher than ambient pressure such that the glue is transported throughout the head, the application head including a plurality of valves each having at least one glue output orifice through which the glue is directly applied to the folded bottom and/or the sheet, the valves being arranged in a configuration that includes at least a first valve row (VRi) and a second valve row (VRii) with each of the first and second valve rows extending along a length of the application head in a direction (y) that is transverse to a bag transfer direction (x).

2. (Currently amended) [[:]] The bottoming device in accordance with claim 1 wherein the glue ~~transfer can be carried out~~ application is performed between the ~~at least one glue output orifice or other glue carrying components of the bottoming device~~ and the ~~sheets~~ sheet and/or folded ~~bottoms~~ bottom in a contact-free manner.

3. (Currently amended) [[:]] The bottoming device in accordance with claim 1 wherein the ~~glue ducts that supply glue to the glue output orifices have at least one valve~~ valve configuration includes a plurality of valve rows (VRi, VRn).

4. (Currently amended) [[:]] The bottoming device in accordance with claim 1 wherein ~~in the gluing station an application head is provided that contains at least one component of at least one glue reservoir or of at least one glue supply line and to which at least one glue output orifice is assigned~~ each of the first and second valve rows includes a plurality of valves.

5. (Currently amended) [[:]] The bottoming device in accordance with claim 4 1 wherein each of the application head has several valves includes a plurality of glue output orifices.

6. (Currently amended) [[:]] The bottoming device in accordance with claim 5 wherein the application head has a plate-like form whereby the glue output orifices are provided on ~~the~~ a side of the application head facing the bag component to be glued that is being formed.

7. (Currently amended) [[:]] The bottoming device in accordance with claim 4 3 wherein ~~valves are attached to the application head~~ each of the plurality of valve rows includes a plurality of valves.

8. (Currently amended) [[:]] The bottoming device in accordance with claim 7 1 wherein the valves are ~~attached~~ provided on a side

of the application head facing away from the bag ~~components to be~~
glued that is being formed.

9. (Currently amended) [[:]] The bottoming device in accordance with claim 7 5 wherein ~~at least one component of the glue output orifices in a direction in space (y) running transverse to a transfer direction~~ have a distance (A) between ~~one another~~ adjacent orifices along the (y) direction ~~that is smaller~~ less than a breadth (B) of each of the valves.

10. (Currently amended) [[:]] The bottoming device in accordance with claim 7 wherein ~~more glue output orifices than valves are provided on the application head~~ each of the valve rows is offset laterally in the (y) direction from an adjacent valve row.

11. (Currently amended) [[:]] The bottoming device in accordance with claim 5 wherein the glue output orifices ~~that are provided in the application head~~ are located in one line ~~running essentially transverse to the transfer direction (y) of the bag components to be glued~~ extending along the length of the application head in the (y) direction.

12. (Currently amended) [[:]] The bottoming device in accordance with claim 5 wherein the valves are ~~provided~~ supplied with the glue by at least one borehole or chamber in the application head.

13. (Currently amended) [[:]] The bottoming device in accordance with claim 12 wherein ~~at least one~~ the borehole or chamber ~~runs essentially extends substantially~~ transverse to the bag transfer direction (x) ~~of the bag components~~.

14-15. (Canceled)

16. (Currently amended) [[:]] The bottoming device in accordance with claim 4 1 wherein the application head is ~~mobile~~ moveable in the (y) direction transverse to the bag transfer direction ~~(y)~~ (x) ~~of the bag components to be glued~~.

17. (Currently amended) [[:]] The bottoming device in accordance with claim 4 1 wherein the application head ~~can swivel~~ is rotatable from ~~the~~ a glue application position.

18. (Currently amended) [[:]] The bottoming device in accordance with claim 17 wherein the rotatable application head ~~can take up standstill~~ is positionable in various stationary positions each dedicated to various definite functions a specific function.

19. (Currently amended) [[:]] The bottoming device in accordance with claim 18 wherein at least two of the ~~standstill~~ stationary positions ~~of the application head are intended that~~ are dedicated

to at least two ~~of the following~~ functions~~[[:]]~~ including
applying glue ~~on the bag components to be glued~~ to form the bag,
sealing the glue output orifices, ~~wiping off the~~ removing glue
contaminating the application head, and rinsing the application
head.

20. (Currently amended)~~[[:]]~~ The bottoming device in accordance
with claim 4 5 wherein ~~the~~ a distance between the output orifices
can be ~~freely~~ selected during the application of the glue ~~on the~~
~~bag components to be glued~~.

21. (Currently amended)~~[[:]]~~ The bottoming device in accordance
with claim 1 wherein the ~~at least one~~ glue duct ~~or the at least~~
~~one glue reservoir~~ has a water connection.

22. (Currently amended)~~[[:]]~~ The bottoming device in accordance
with claim 21 wherein the water connection has a check valve.

23. (Currently amended)~~[[:]]~~ The bottoming device in accordance
with claim 1 wherein the ~~at least one~~ glue duct ~~or the at least~~
~~one glue reservoir further comprises~~ includes at least one of a
pressure relief valve, a pressure sensor, and a pressure
controller.

24. (Currently amended) [[:]] The bottoming device in accordance with claim 1 wherein the application head ~~has~~ includes a projection on the a side ~~(76)~~ facing the bag ~~components to be glued~~ that is being formed, and the projection is closer to the bag than is the output ~~orifices (71)~~ orifice during the glue application of ~~the bag components to be glued (1, 2)~~.

25. (Currently amended) [[:]] The bottoming device in accordance with claim 4 1 wherein the application head ~~is provided with glue and/or water by~~ includes flexible lines that provide glue and/or water to the head.

26. (Currently amended) [[:]] The bottoming device in accordance with claim 3 1 wherein ~~at least one valve that provides at least one glue output orifice with glue can be controlled independent~~ each of the valves is controllable independently of the other valves[[:]] ~~so~~ such that the glue application of ~~the glue line produced from the at least one~~ respective glue output orifice can be selectively started and stopped ~~selectively~~.

27. (Currently amended) [[:]] The bottoming device in accordance with claim 26 wherein the ~~opening and closing of the at least one valve can be carried out~~ is controllable to open and close during the glue application of ~~a bag component to be glued~~.

28. (Currently amended) [[:]] The bottoming device in accordance with claim 3 1 wherein the application head includes at least 5 five valves ~~are provided~~.

29. (Currently amended) [[:]] The bottoming device in accordance with claim 9 wherein a sum (D) of the distances (A) between the glue output orifices ~~that are fed with glue from a valve in the direction in space running transverse (y) to the transfer direction (x) of the bag components to be glued~~ in each of the valves is ~~smaller~~ less than the breadth (B) of the ~~valves~~ valve.

30. (Currently amended) [[:]] The bottoming device in accordance with claim 1 wherein the glue ~~channels that transport the glue to a majority of valves have~~ duct has a ~~common~~ cross-sectional area that is at least half as large as ~~the~~ a sum of ~~the~~ cross-sectional areas of the glue output orifices ~~that extrude this glue~~.

31. (Currently amended) [[:]] The bottoming device in accordance with claim 1 ~~wherein~~ further comprising a metallic cylinder hard counter bearing ~~is provided~~ on which the ~~bag components to be glued~~ folded bottom and/or the sheet are located during the glue application.

32. (Currently amended) [[:]] The bottoming device in accordance with claim 3 1 wherein the application head includes at least one stopper located in the transfer direction a transport path of the glue to the valves ~~more stoppers are provided with which the glue channels~~ duct and/or the glue output orifices can be sealed.

33. (Currently amended) [[:]] The bottoming device in accordance with claim 32 wherein the ~~sealability of the glue channels and/or glue output orifices is ensured by pins and/or screws~~ stopper includes a pin.

34. (Currently amended) [[:]] The bottoming device in accordance with claim 33 wherein the ~~sealing of the channels and/or glue outlet openings takes place with pins that are held rotatably in a format plate system, that have a glue outlet that seals the channels and/or output orifices when the pins are rotated~~ pin is rotatably held in a format plate having a glue outlet such that rotation of the pin seals the duct and/or the glue output orifices.

35. (Currently amended) [[:]] The bottoming device in accordance with claim 33 wherein the ~~pins or screws are~~ pin is inserted in at least a part of the glue output orifices ~~whereby the orifice~~ such that a main axes axis of inertia of the ~~pins or screws~~

~~coincide~~ pin coincides with ~~the~~ an axis of the glue output orifice.

36. (Currently amended) [[:]] A process for the operation of a bottoming device in accordance with claim 3 1 wherein for a specific gluing format at least one ~~valve that is active during the formation of a definite glue format~~ of the valves is opened or closed at ~~either~~ certain points of time ~~than~~ relative to the other valves during the ~~gluing of a bag component~~ glue application.

37. (Currently amended) [[:]] The process in accordance with claim 36 wherein a time period between the opening and the closing of the valve is less than 5 milliseconds.

38. (New) A bottoming device that forms a cross bottom paper bag, the device configured to form the cross bottom of the bag by providing folds at extremities of a tubular segment from which the bag is produced such that lines of a glue are applied to a folded bottom on the extremities of the tubular segment and/or to a sheet to be glued with the bottom, and to connect and glue the folded bottom and the sheet, the device comprising a gluer having an application head including a plurality of valves each having at least one glue output orifice through which the glue is directly applied under pressure to the folded bottom and/or the

sheet, the valves being arranged in a configuration that includes a plurality of valve rows (VR_i to VR_n) each extending along a length of the application head in a direction (y) that is transverse to a bag transfer direction (x), with each of the valve rows including a plurality of valves (V_i to V_n) arranged along a length of the valve row.

39. (New) The bottoming device in accordance with claim 38 wherein each of the valves includes a plurality of glue output orifices.

40. (New) The bottoming device in accordance with claim 39 wherein each of the valve rows is offset laterally in the (y) direction from an adjacent valve row.

41. (New) The bottoming device in accordance with claim 40 wherein each of the valves includes a group of glue output orifices oriented in a line extending in the (y) direction and having an orifice group width (D), the orifice group being centered within a breadth (B) of the valve.

42. (New) The bottoming device in accordance with claim 41 wherein the offset (C) is equal to a lateral distance between the centered orifice group in one of the valve rows and the centered orifice group in an adjacent valve row.

43. (New) A bottoming device that forms a cross bottom paper bag, the device configured to form the cross bottom of the bag by providing folds at extremities of a tubular segment from which the bag is produced such that lines of an adhesive are applied to a folded bottom on the extremities of the tubular segment and/or to a sheet to be adhered with the bottom, and to connect and adhere the folded bottom and the sheet, the device comprising an adhesive application head including a plurality of valves each having a plurality of adhesive output orifices through which the adhesive is directly applied under a higher-than-ambient pressure to the folded bottom and/or the sheet in a contact-free manner, the valves being arranged in a configuration that includes a plurality of valve rows (VR_i to VR_n) each extending along a length of the application head in a direction (y) that is transverse to a bag transfer direction (x), with each of the valve rows including a plurality of valves (V_i to V_n) arranged along a length of the valve row.